JPRS 79372

4 November 1981

Worldwide Report

TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

No. 187

FBIS FOREIGN BROADCAST INFORMATION SERVICE

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BRIEFS

CZECH-ANGOLAN NEWS AGREEMENTS--Prague, 9 Oct (CETEKA)--Agreements on cooperation between the Czechoslovak news agency CETEKA and the Angolan news agency ANGOP, and between Czechoslovakia and Angolan television were signed here Friday, on the occasion of the current official friendly visit to Czechoslovakia by Jose Eduardo dos Santos, chairman of the MPLA-Party of Labour and Angolan president. The agreements were signed by CETEKA General Directro Otokar Svercina and Czechoslovak Television General Director Jan Zelenka, and by member of the visiting Angolan delegation Paulino Pinto Joao, state secretary for cooperation. The two sides agreed on the exchange of information aimed at deeper understanding between Czechoslovakia and Angola and better knowledge of the two countries' achievements and stands on international problems. [Text] [LD100529 Prague CTK in English 1802 GMT 9 Oct 81]

'KCNA'-TANZANIAN NEWS AGENCY AGREEMENT--Pyongyang, 18 Oct (KCNA)--An agreement on exchange of information and mutual cooperation between the KOREAN CENTRAL NEWS AGENCY and the SHIHATA NEWS AGENCY of the United Republic of Tanzania was signed in Dar es Salaam on October 12, according to a report. The agreement was signed by the DPRK ambassador to Tanzania on behalf of the KOREAN CENTRAL NEWS AGENCY, and the director of the SHIHATA NEWS AGENCY. [Text] [SK180909 Pyongyang KCNA in English 0843 GMT 18 Oct 81]

CSO: 5500/2016

BRIEFS

'VNA', 'SPK' COOPERATION AGREEMENT--Hanoi, 14 Oct VNA--An agreement on cooperation for the period 1981-1985 between VNA and SPK was signed here today. The signatories were Dao Tung and Em Saman, directors-general respectively of VNA and SPK. Under this agreement the two news agencies will help each other to improve newsreporting, build the technical basis and train media and technical workers. [Text] [OW141601 Hanoi VNA in English 1537 GMT 14 Oct 81]

TAIWAN, JAPAN TV COOPERATION--Tokyo, 19 Oct (CNA)--The China Television Company Ltd of the Republic of China and the Nippon Television station, the largest private-owned television station in Japan, Monday entered into sisterhood relations. A signing ceremony was held Monday afternoon at the Nippon Television station in Tokyo with President Mei Chang-ling of the China Television Co., Ltd., and Kobayashi Yosoji, president of the Nippon television station as well as president of the YOMIURI SHIMBUN CO., jointly presiding. Following the establishment of the sister-hood relations, the two TV companies will strengthen their cooperation and exchanges of information in the field of television broadcasts. Ma Soo-lay, representative of the East Asian Relations Association in Japan, was invited as a guest to attend the signing ceremony. [Text] [OW191101 Taipei CNA in English 1028 GMT 19 Oct 81]

CSO: 5500/2016

TELECOM STUDIES INTRODUCTION OF OPTICAL FIBRE NETWORK

Canberra THE AUSTRALIAN in English 22 Sep 81 p 21

[Article by Nicholas Rothwell]

[Text]

AUSTRALIA's first optical fibre telephone network, a high powered communication system which can transmit the entire Encyclopaedia Britannica in under a second, has been unveiled at Sydney University.

The new telephone system was designed with the help of Telecom, which is considering the development of a national optical fibre network.

Optical fibres work by sending messages — in the form of pulsed light — down a thin sliver of glass wire.

They are far cheaper than copper wires and would facilitate a vast expansion of the national telephone network.

Optical fibre telephones are already in use in the US and in England, where they have increased the efficiency of telephone exchanges.

Telecom has already installed small test systems in Melbourne, and there are some point-to-point optical fibre links in NSW, including one operated for the Ministry of Defence.

But the Sydney University system is the first "live" network, and it is being closely studied by Telecom experts.

"The new system is invaluable because it has given us an idea of the problems and benefits of using optical fibres in Australia," a Telecom spokesman said.

The advantages of optical fibres were the high speed of the new networks, the cheap glass used to connect telephones instead of the expensive copper wire used in conventional networks, and the vast potential for expansion in optical fibre systems.

"The carrying capacity of optical fibres is so much greater that we will be able to place more telephone lines in a single cable," the spokesman said.

Sydney University expects to expand the network to connect its entire technical complex and hopes to become a showplace for other organisations, with computers, terminals and telephones scattered over many buildings.

Organisations such as hospitals, which need quick and reliable connections between their computers and telephones, are likely to adopt the new technology.

The University Computing Centre network manager, Mr Brian Rowswell, said the system had already saved the university $14,000 in rental of conventional equipment from Telecom, and would save hundreds of thousands of dollars in rentals of signal processing equipment.

CSO: 5500/7503

STATE TO CONTINUE TRADITIONAL, BUT NOT CABLE, TV CONTROLS

Canberra THE WEEKEND AUSTRALIAN in English 12-13 Sep 81 p 7

[Text]

THE Federal Government has committed itself to maintaining control over television and radio services, ruling out any early prospect of self-regulation in the industry.

But the Minister for Communications, Mr Sinclair, hinted yesterday that private enterprise would have control over cable television.

The policy statement caught industry sources by surprise – and disappointed them.

Mr Sinclair said: "I cannot see any radical reduction in the Government's involvement in traditional broadcasting services."

The broadcasting industry has insisted that self-regulation should be the reward for complying with open public hearings for television and radio licence applications or renewals.

Mr Sinclair argued that for technical reasons, principally the limitations of the broadcasting spectrum and a public concern about standards, there were good reasons for government regulation.

But he effectively foreshadowed a cable TV industry free of the kind of regulations applied to conventional broadcasting.

COMPETING

Mr Sinclair emphasised the difference between cable TV and current services, saying the new technology would make no demands on the radio spectrum.

He said if there were limited Government involvement in cable television, the policy of limiting interests in the ownership of broadcasting stations might also have to be reviewed.

In a wide-ranging speech to the Committee for Economic Development of Australia in Sydney last night, Mr Sinclair said:

- Telecom had powers to breach its monopoly on telecommunications services, enabling it to authorise outside involvement in the system.
- It was possible that private enterprise could become involved in the postal system, competing with Australia Post by providing "value added" service for faster mail deliveries.
- Broadcasters would in future have to provide detailed specifications for new services or changes to existing facilities. This was formerly done by the Department of Communications.

The Australian Broadcasting Tribunal will shortly launch an inquiry into the introduction of cable television and off-air television for subscribers.

Although a departmental submission will be lodged, Mr Sinclair effectively outlined the principles of government policy on cable television.

He said market forces should determine the number of cable services. Under these circumstances, the Government would merely set out the technical specifications with which the services would have to comply.

CSO: 5500/7502

CONTRACTS SOUGHT FOR NEW CABLE LINK WITH CANADA

Sydney THE SYDNEY MORNING HERALD in English 10 Sep 81 p 25

[Article by Susan Woods: "$350M Sea Cable Contracts Expected"]

[Text]

Contracts for the largest single international telecommunications project, in which Australia has more than a 50 per cent interest, will be announced early next month.

The $350 million ANZCAN submarine cable, which will link Australia and Canada 15,000 kilometres across the Pacific, will provide substantial work for local manufacturers of telecommunications equipment.

The cable is even more expensive than Australia's proposed domestic satellite, currently estimated to cost $282 million.

Australia's Overseas Telecommunications Commission will be the major shareholder, with a contribution of $200 million.

Worldwide tenders for the cable's design, manufacture and installation were called in October last year and closed in February. Specifications called for as much participation as possible by Australian, Canadian and New Zealand industry.

From Australia, the cable will pass through Norfolk Island, where a small spur cable will shoot off to New Zealand, and then through Fiji and Hawaii, to Canada.

Several companies are understood to have bid for the ANZCAN contracts, although not all have bid for both the manufacture of terminal station and submarine equipment, and laying of the cable.

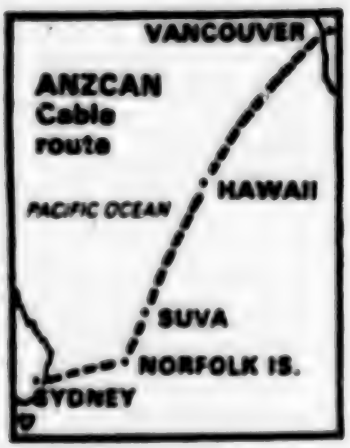
Some companies manufacture repeaters (which reinforce signals along the cable) while others manufacture cable itself.

The companies include an American group, part of the American Telephones and Telegraph system, which makes repeaters, and Simplex, which manufactures cable.

A French consortium, Submarcom, has tendered, as have three Japanese companies, Fujitsu and NEC, both of which make repeaters, and Ocean Cable Company, which manufactures cable and is owned by the other two companies.

Standard Telephones and Cables in the UK has also bid.

OTC's assistant general manager of corporate services, Mr Peter Meulman, who is also system



manager of the ANZCAN project, said contracts for the actual manufacture and laying of the cable system would be placed immediately following the signing of an international agreement in Vancouver early next month.

ANZCAN will replace the existing link between Australia and Canada, COMPAC, built in 1962 but with a limited design life.

"COMPAC will be allowed to fade away gracefully, like a little old lady, until it's no longer economic to operate," Mr Meulman said. The new cable will carry more than 1,200 circuits, 15 times the capacity of COMPAC. It will relay all telecommunications — such as telephone and telex — except for television which is transmitted by satellite.

CSO: 5500/7502

DOMESTIC SATELLITE FINANCING VIEWED; CONSORTIA CONCEPT OPPOSED

Melbourne THE AGE in English 17 Sep 81 p 21

[Article by Lorenbo Boccabella: "Satellite Share Float Planned"]

[Text]

The Federal Government plans to offer shares to the public in Australia's proposed domestic satellite.

The Government has already decided in principle to retain a 51 per cent stake in the satellite with the rest being offered to private enterprise for investment.

Until now it was not clear if the private enterprise share would be taken up by consortia of companies in non-sharemarket transactions.

Now a committee of Federal Cabinet comprising Ministers for Communications, Finance, Treasury and Transport has approved of the public share float concept.

The satellite will revolutionise television services to Australia as it creates the prospect of direct TV reception to both the outback and the cities.

It will also provide a myriad of services ranging from business data, telephone, school-of-the-air and general competitive facilities to what is now provided by Telecom.

However, the Government has not yet settled what type of ownership and control limitations will be placed on the holding of the shares in the private sector of the satellite.

Some controls are envisaged as the Minister for Communications, Mr Sinclair told a House of Representatives Estimates Committee this week that there were delays in establishing the public corporation because of the need to satisfy Stock Exchange requirements.

The scheme envisaged in the short term is for a proprietory company to be set up with private enterprise membership on the board.

This board will then examine the four tenders which have been received for the space segment.

The cost of the satellite project ranges up to $500 million but at this stage it is not known how much of this will consist of share capital.

Mr Sinclair also told the Estimates Committee that the Commonwealth would own the actual satellite in space which tends to suggest that the Satellite Corporation will enter into some type of leasing arrangement.

The Government appears to have moved against the consortia ownership concept because of the difficulties which could arise in competing corporate interests seeking representation on the board.

Australia's media groups have organised themselves into consortia which are examining the satellite question.

The eventual float could see a scramble into how the satellite cake will be carved up.

CSO: 5500/7502

WA INSTITUTE UNVEILS LOW-COST, MICROPROCESSOR AIR BEACON

Canberra THE AUSTRALIAN in English 22 Sep 81 p 22

[Article by Joe Poprzeczny]

[Text]

A WEST Australian electronics consultant working at the West Australian Institute of Technology has developed a low cost aviation non-directional beacon.

The device if commercially produced could be supplied to isolated communities and settlements for less than $1000.

Mr Trevor Marshall, of WAIT said: "The system relies on a single Intel 8035-11 microprocessor which can be coded in the field.

"It was designed at the institute and a prototype has been operating near the Royal Flying Doctor Base at Ivanhoe near Broken Hill."

Mr Marshall said the prototype was constructed last year by final year electronics students at the Institute.

"It has been operating faultlessly in the Broken Hill area and its extremely economic advantages mean the outback and developing countries in Africa and South-East Asia would be ideal markets for a commercial producer," he said.

The system's microprocessor allows easy programming of the identification signal to enable modification of the beacon network without the necessity for equipment to be removed from the field.

The optimum power supply is from 20 to 28V DC at the output of the regulator. A higher radio frequency output of 50W is available at the higher voltage, but it is of no consequence unless the licence permits it.

At the 20V level a 24V bank of lead acid cells can be operated to 100 per cent capacity without losing performance and more than 20W of radio frequency is available.

Commenting on the cost factor, Trevor Marshall said: "The final implementation cost of this approach is considerably less than that of an equivalent system.

"Easy reprogramming and zero ageing of modulation parameters minimises operational costs.

"Manufacturing costs are low as the digital circuitry requires no adjustments or calibration after manufacture."

He claims that officials at the Government Aircraft Factories see a need for the low cost system, but a commercial manufacturer is needed to produce and market the system.

CSO: 5500/7503

DATEC SPURS COMPUTER INDUSTRY DRIVE FOR SUBSCRIPTION TV

Canberra THE AUSTRALIAN in English 29 Sep 81 p 21

[Text]

LOCAL software house Datec Pty Ltd is spearheading a computer industry drive to set up an over-the-air subscription TV (STV) service in Australia.

Datec's managing director, Mr Harry Douglas, has set aside $2 million for start-up costs and Prime Computer managing director, Mr Lionel Singer and Dr Tom Wenkart, of Morlea Professional Services and Pace Computer Group, are geared to contribute a further $2 million each towards a joint venture.

In one of the latest of 188 submissions lodged for the national inquiry into pay-TV which begins on October 10, Datec argues that the only immediate and relatively low-cost way to introduce this service is by STV.

Australia should by-pass cable TV at this stage, the submission states, because developments in light-bearing glass fibre technology will supplant the present electrical copper-wire cable TV system later this decade.

"After reading all the submissions to the Australian Broadcasting Tribunal, Datec appears to be the only one presenting a detailed business plan for introducing radiated pay-TV," Mr Douglas said.

"An STV operation is computer-driven in practically all its aspects, yet, apart from a few mostly overseas suppliers, there has been scant interest among Australian data processing companies in obtaining a licence."

The Datec group proposes that it lead a syndicate of equity shareholders to build a small UHF television station at a cost between $2 million and $3 million, including studio equipment and two TV transmitters.

This syndicate, made up of seven suggested types of members, would contribute $5 million in liquid assets at the time an STV licence was granted — constituting 51 per cent of total paid-up shares of about $10 million.

Subscribers would pay an estimated $20 a month for special films, sporting events and in-depth news and documentary programs.

The installation fee would be $50 and subscribers would pay about $50 more for a decoder box which would unscramble the signals and which would require only minor modification to an existing TV.

Three computers and ancillary equipment costing about $1 million would be required for an STV operation, Mr Douglas said.

AUDIENCE

There would be room for only one operator per capital city and with the present cost of equipment and programming the only viable locations would be Sydney, Melbourne and the Gold Coast.

Each could have more than 100,000 subscribers in the longer term, he said.

The Datec submission points out that Sydney has a potential audience in close range of a simple transmit-

ter/antenna, so that elaborate and expensive equipment would not be necessary.

This refers to the population band which extends from Sydney's eastern suburbs in a direct line to the west and could be reached from any of the tall buildings in the Sydney-Kings Cross area.

The group estimates total operating costs for STV at $7 million a year for the first two years, rising to $11 million a year as subscribers build up to the break-even point of 50,000.

The level of 50,000 subscribers would be aimed for at the end of the second year – two years after granting of the licence and 15 to 18 months after the service is first switched on, Mr Douglas said.

At the level of 70,000 subscribers, the running costs would be about $12 million a year and trading profit before tax and dividend would be around $5 million yearly.

Datec has already applied for a choice of several business names for an STV operation and expects to provide up to $30,000 for its wholly-owned education and research company, Datec Institute Pty Ltd, for further market research to define initial consumer needs.

The cost of preparatory work by the new company to be set up to prepare a licence application would be well in excess of $100,000, Mr Douglas said.

Datec says it has also had talks with two Australian microcomputer manufacturers with a view to local manufacture of decoding boxes, the design of which could be obtained under licence from the US, but which it considers would be relatively simple to develop from scratch in Australia.

The submission points out that one of Datec's inhouse computers, a Hewlett-Packard Series III, is the same as that used by Selectv in Los Angeles for central computer control of its STV operation.

"Our staff could modify the Selectv computer programs for an Australian operation – and probably other STV programs from the US – more quickly and at less cost than other potential STV operators in Australia," Mr Douglas said.

The submission, made jointly by Datec and Harry Douglas Pty Ltd, follows two research trips Mr Douglas made to the US earlier this year.

In addition to Mr Singer of Prime and Dr Wenkart of Pace as likely members of an STV syndicate, Datec recommends the following:

● ONE media member, from either radio, film or the print media, not already involved in commercial TV.

● A BROADLY-based Australian public company, preferably a major retailer with strong experience in consumer product marketing, bulk billing and credit control.

● AN up-and-coming Australian film maker, with the aim of establishing close links with the local and overseas industry.

● A SENIOR chartered accountant with a proven record as an entrepreneur in high technology.

● A COMPANY in the business of installation and service of consumer products in the home on a large-volume basis.

The group has nominated Harry Douglas Pty Ltd and Datec Pty Ltd as major equity members and envisages that foreign ownership should be no higher than 15 per cent.

Pointing to flexibility in control, Datec suggests the board of directors for an STV operation would not necessarily be the same as the syndicate members.

The group says it plans to encourage Australia's burgeoning film industry by negotiating for first release. For example, a series such as A Town Like Alice could command an extra fee from subscribers with one-half going to the film maker.

It believes an Australian STV operation should strive for 30 per cent local content, but suggests that in the early stages a firm quota percentage need not be imposed.

CSO: 5500/7503

TECTRAN EXPANDING OPERATIONS IN MULTIPLEXOR MARKET

Melbourne THE AGE in English 29 Sep 81 p 31

[Text]

Tectran, a Sydney-based data communications company, has opened an office in Melbourne to gain a greater share of the growing multiplexor market.

Multiplexors are of growing importance because of their ability to boost data transmission capacity between two points.

This capability is essential in Australia where major capitals are so widely separated.

Tectran opened the Melbourne office last week following good sales in Sydney.

"We've been very successful there," the company's new branch manager, Mr Clive Hendry explained. "In the last 12 months 20 major companies in Sydney have brought Comdata multiplexors."

He said Tectran had 40 per cent of the Sydney market in 1980-81, and its sales have expected to top $1.8 million in the next 12 months.

Already the company is thinking of further expansion. A Brisbane office is due to open next month, and offices will open in Adelaide and Perth before the end of the year.

Multiplexors, allow multi-terminal use of a single Telecom link.

Without a multiplexor, only one terminal can communicate with an interstate host computer. Multiplexors allow two, four, or even eight terminals to use the link at the same time.

Because of this capability and the fact that they sharply increase transmission speed data costs are much cheaper.

"A Telecom modem link between Melbourne and Sydney rents for about $20,000 a year," Mr Hendry said. "So if you want two terminals talking to a host computer, you have to rent two lines, and that's expensive.

"Instead, you could buy two multiplexors for $5000, and have a four-terminal capacity. It's much cheaper."

Tectran's Comdata 520 allows straight point-to-point multiple transmission. Its 550 allows networking, such as a link from Melbourne to Sydney, then on to Brisbane and Townsville.

Tectran's 520 has a capacity of up to eight channels, asynchronous, with a transmission speed of 9600 bits a seconds.

Mr Hendry said a 16-terminal link between two points would cost from about $12,000. "This is done using four multiplexors, two at each end of the line," he said.

CSO: 5500/7503

BRIEFS

INTELSAT INTERCEPTS--The product from an "antenna farm" at Welshpool may soon have a dramatic effect on the lifestyle of people living in remote areas of Australia. A Perth-based company is making low-cost earth stations to trap TV signals from the Intelsat TV satellite in stationary orbit 36,041 km above the Pacific Ocean between Hawaii and the equator. The earth stations, destined for domestic use on homesteads and mining camps in faraway places, consists of a spherical antenna which reflects signals from Intelsat IV to a horn placed at the critical focal point in front of the antenna. The extremely weak signals from the satellite are amplified 100 times before being fed into the converter. The signals are then fed into any domestic TV receiver. There is a choice of programmes from either Channel 2 in Perth or Sydney. A fully-operational earth station will be set up at the Royal Show next month. The complete system will cost about $6000. Two of the earth stations have been established so far in WA, one at Laverton and the other at Yeelirie. [Text] [Perth THE WEST AUSTRALIAN in English 18 Sep 81 p 10]

CSO: 5500/7503

CENTRAL TELECOMMUNICATIONS RESEARCH LABS SET UP

Lahore THE PAKISTAN TIMES in English 13 Oct 81 p 5

[Text]

ISLAMABAD, Oct. 12: Telegraph and Telephone Department has established central telecommunication research laboratories at Islamabad with the technical co-operation and financial assistance of Japan to promote study and research in various fields of telecommunications in Pakistan, says a handout.

The Federal Minister for communications, Mr. Mohayyuddin Baluch, will perform the opening ceremony of the Rs. 118 million project tomorrow.

The laboratories will be responsible to undertake design and development of new equipments and systems for the specific requirements of Pakistan and recommend their economic means of production.

It will study the technology and present systems in use in the country and those developed by the advanced countries.

It will also watch and oversee the progress and developments in various telecommunication fields in the world and conduct research in those fields.

It will also be its responsibility to study and keep T and T abreast of the latest developments in telecommunication techniques and systems in international communications and regulations, in international forums like the International Telecommunication Union (ITU), and International Satellite Organisation (INTELSAT) etc.

Establishment of the telecommunication was made possible by Japanese Government grant assistance of 2200 million yen (about Rs. 84 million), out of which 1,566 million yen have been spent on the construction of the building and 634 million yen on various telecommunication systems and research equipment imported from Japan.

CSO: 5500/4506

BRIEFS

THIRD WORLD NEWS ORGANISATIONS--Lahore, Oct 15--Raja Mohammad Zafarul Haq, Federal Minister for Information and Broadcasting, yesterday said that there was a growing desire in the Third World countries to have a wider mutual news exchange programme in order to ensure the dissemination of factual and objective information. Speaking as chief guest at the installation of the APP Employees Punjam Union at the Lahore Chamber of Commerce and Industry premises, he said the Third World had realised that some of the major world news agencies were not completely objective in their reporting. In many cases, these news agencies circulated information which was of little interest to Third World countries and totally ignored information which was of immense importance to these countries. Certain powers, he said, even used their news mecia to destabilise a particular country or to put it on a particular channel. In order to meet this challenge, he said, the Third World countries wanted to enlarge the scope of exchange of news among themselves through their own news organisations.-- APP [Text] [Karachi DAWN in English 16 Oct 81 p 15]

CSO: 5500/4505

TELEPHONIC WIRE NETWORK TO BE PROTECTED FROM THEFT

Hanoi HANOI MOI in Vietnamese 28 Aug 81 p 3

[Article by Trong Nghia: "Protect the Wire Lines for Signal Communications"]

[Text] People have frequently complained about the difficulty to make a telephone call to communicate with agencies and enterprises outside the city! This difficulty has many causes. For example, at the telephone center in the first 6 months of this year, long-distance calls could not be placed in 28,200 instances of which 10,900 were caused by wire trouble, 4,375 by mechanical breakdowns and 10,900 by rental problems. In the intraregional wire network, there were 1,229 (7 percent) more cases of loss of communication than in the same period last year. The signal communication wire network is composed of many types of wire: bare wires, flexible wires, plastic covered cables, round and flat cables and so on. Though cable lines provide a high signal quality, the rural districts are still using mainly bare iron wires and flexible ones. In the outskirts, most of this wire network crosses desert fields and runs alongside dikes and communication roads. Over the past few years, the policy of the posts and telegraph sector has been to develop the telephone network on the district scale to promote the building of agro-industrial districts. Many factories, schools and agencies are concentrated at certain places in the suburbs. Therefore, the need to communicate by telephone has increased and been partly met. Apart from the network belonging to the posts and telegraph sector, there are now in the rural districts signal communication wire networks pertaining to the army and the railroad sector as well as wire radio networks established by the wire radio management and operation enterprise. The signal wire line belonging to the posts and telegraph sector alone includes more than 1,800 kms of "surface" wire [giaay nooir] and 159 kms of cables.

At night, it is very difficult to protect the wires which cross desert areas. This difficulty has been taken advantage of by dishonest people to stealthily cut wires. They usually hang around in groups of 2 or three persons and carry out their activities on the road sections far from residential areas. To conceal their illegal acts, a number of them pretend to go out to catch frogs or wear army uniforms and rucksacks to impersonate on-duty militarymen. It must be noted that there are from 60 to 100 cases of wire theft per year. In only 2 years--1979 and 1980--the total length of stolen wires in the rural districts came to over 100 kms. In the first quarter of this year, there was a loss of more than 19 kms of iron wires, more than 7 kms of flexible wires and 110 meters of cables. In only one night, the village of My Dinh (Tu Liem District) lost 1,400 meters of iron wires, the village of Thanh Xuan (Soc Son District) lost 2,100 meters and

the Gach posts and telegraph station (Phuc Tho District) 3,000 meters. There was a year when only a month after its construction, the wire line from the Dong Anh posts and telegraph station to Thuy Lam and Lien Ha lost a length of 12 kms of iron wire. The stolen iron wire was sold by evildoers to illegal businessmen to make frames to hold loads [at the ends of carrying poles], and to make baskets, nails, bicycle wheel spokes and so forth.

This situation has greatly hampered the maintenance of signal communications. There was a year when communications were cut off for more than 90 hours on the average each month. On the other hand, this means a loss of socialist property, especially of materials which cannot yet be produced domestically.

In compliance with Directive No 230 of the Premier's Office, the Municipal People's Committee has ordered the levels and sectors concerned to strengthen the protection of wire lines. Almost all rural districts have held seminars on this subject. Dong Anh District has taken numerous protective measures and coordinated the mass movement with the activities of the forces in charge of maintaining order and security in villages. One of these measures is the signing of a pledge to protect the wire line between the chairman of the district people's committee and the chairman of the people's committee of the village whose territory is crossed by the wire line. The pledge states: "...we will assume the protection of the posts, telegraph and radio wire line from...to..." and will simultaneously "pay attention to inculcating in the cadres, party members and people in the village a sense of responsibility and an awareness of the need to protect the wire line...and to ensure its safety under all circumstances; the village people's committee will be responsible for any loss or damage." This kind of pledge pinpoints responsibility and, if thoroughly implemented, will help limit the abovementioned negative practices. Though having paid attention to executing the high level's directive, many localities have not yet fully realized their responsibilities. In this respect, it must be clearly said that it is necessary not only to detect and prevent losses due to theft but also to consciously protect the wire lines from deterioration. People in a number of areas have the habit of attaching buffaloes and cattle to wire poles (which will likely break up and fall down before long because they are made of bamboo or wood); worse still, children have thrown stones at the porcelain pots to break them off and take sulphur or have even cut off wires (in Phu Lo Village, Soc Son) and dug up poles and taken them home for use. To insure signal quality, it is necessary to properly maintain cables and to avoid hitting them and damaging them.

In the future, the signal network in the rural districts will be further developed. The post and telegraph stations of Trau Quy, Tu Liem, Thanh Tri, Dong Anh and Son Tay have recently begun to set up automatic switchboards. In Lang, a 5,000-number switchboard has been installed with a 120-line FRC microwave to intensify the intermediate relay [trung kees] for the Gia Lam and Dong Anh posts and telegraph stations. In addition to concentrating on serving local leading organs, these projects are designed to expand the signal network to important agricultural villages, to vegetable growing areas and to typhoon and flood control centers.

The Municipal People's Committee has issued "regulations on the management and protection of signal communication wire lines." Since these regulations have a legal basis, the levels and sectors concerned and the entire people have the duty to implement them.

9332
CSO: 5500/4503

BRIEFS

RADIO-TV INSTALLATION INAUGURATED--Dimitur Trifonov, special RABOTNICHESKO DELO correspondent, reports as follows from the Orelyak mountain peak in Blagoevgrad Okrug: The area of the Orelyak peak was previously known only for its particular beauty and for the historical significance of the spot where the Pirin area patriot Yane Sandanski was killed. Today a modern radio-television center is going up here and the first experimental program on Bulgarian television will be broadcast from here tonight. "A powerful and high-quality signal will cover the territory of the Blagoevgrad Okrug and part of Smolyan and Pazardhzik okrugs as well," the engineer Ilya Semerdzhiev, the director of the "Radio Stations and TV" section attached to the Ministry of Communications, explains. He adds: "The construction workers commissioned this project 16 months ahead of schedule. We now have to use the equipment installed here in an efficient manner so as to be able to transmit high-quality radio and television programs from here." The design of this unique equipment was worked out by experts from the Insproekt Experimental Institute attached to the Telekompleks Scientific Research Enterprise. The work was carried out under extremely difficult weather conditions. The tower is 105 meters high and there is antenna equipment attached to it. The construction was carried out by Sofia Building-Assembling Administration and many highly experienced construction workers and technicians participated in this project that was accomplished within a year. [Summary] [AU041639 Sofia RABOTNICHESKO DELO in Bulgarian 3 Sep 81 p 1]

CSO: 5500/2016

RECIFE INITIATES INSTALLATION OF ATLANTIS SUBMARINE CABLE

Sao Paulo O ESTADO DE SAO PAULO in Portuguese 29 Sep 81 p 16

[Text] Recife--Work began yesterday at Boa Viagem beach in Recife to launch the Atlantis submarine telecommunications cable, which will have a capacity of 1,380 new circuits and provide services of telephone, telex, facsimile and information transmission from Brazil to Europe via Africa. This week, the Danish cable-launching ship, Gulstav Trader, will lay the first section extending about 4 miles from the Pernambuco coast.

A buoy will mark the end of the cable in the sea and in November steps will be taken to lay the cable in deep water, beginning at that point. A launching similar to that of Recife will occur in Dakar, Senegal, directed toward Brazil. The Recife-Dakar section will be completed by January 1982 for subsequent connection with the Dakar-Portugal section. Once the two sections are connected, the use of the telecommunications circuits should start up in August 1982.

The installation of the submarine cable began at 0730 hours yesterday and ended at about 1030 hours after the cable was hauled to the beach by a tugboat and onto the sand by tractors up to an EMBRATEL [Brazilian Telecommunications Company] unit on the Boa Viagem beach where the Bracan submarine cable is also installed and has served to connect Brazil with Europe via the Canary Islands since 1973.

Brazil is the major shareholder of the international consortium established to install the Atlantis system, with 28.6 percent of the $250 million--about 25 billion cruzeiros--invested in the operation; other participants are France, Italy, West Germany, the United Kingdom, Portugal, Switzerland, Senegal, Ivory Coast and Argentina.

The Atlantis cable is divided into two sections: one from Brazil to Senegal (Recife-Dakar) extending over a distance of 3,430 km and the other from Senegal to Portugal (Dakar-Cabo) measuring 2,930 km. According to EMBRATEL, which coordinated the installation of the cable yesterday, "the importance of the Atlantis sytem for Brazil's international communications is evidenced by its need to increase the traffic capacity between Brazil and Europe, since there is a growing need for telecommunications services to the European countries.

8568
CSO: 5500/2008

SATELLITE TRACKING ANTENNA FIELD TESTS INITIATED IN CAMPINAS

Sao Paulo O ESTADO DE SAO PAULO in Portuguese 29 Sep 81 p 16

[Text] Campinas--Communications Minister Haroldo Correia de Mattos said yesterday at the Research and Development Center of TELEBRAS [Brazilian Telecommunications, Inc] in Campinas that "Brazil is now going through the principal phase of its technological development with the nationalization of equipment and components." The minister was in Campinas taking part in the field testing of the most advanced system of pickup and retransmission developed in the country, the tracking antenna of 6-meter satellites, the Ansat-6, built experimentally at the Aerospace Park of Sao Jose dos Caompos by AVIBRAS [Brazilian Aviation, Inc.].

According to TELEBRAS research and development technicians, even on the highest level, by next year about 60 antennas are to be installed on Brazilian territory, making it possible to receive microwave signals from satellites with prefection, even in distant cities. The response to this new equipment is expected to be great, principally because it costs 20 times less than conventional antennas with a parabola of 10 meters. "It is an important product of the TELEBRAS research center," the minister commented, "principally now with the Brazilian communications satellite program."

The minister confirmed the date of March 1985 for the operation of the Brazilian domestic satellite which will cover the entire national territory with excellent quality, according to the technicians. Until now, five groups are interested in setting up the satellite, according to the minister: two U.S., two French and one Canadian.

"First we shall make a study of the transaction from a business standpoint, what the interested parties can offer us and what we can offer. I believe the satellite will cost us about $100 million--about 10 billion cruzeiros," he said.

In speaking to experts in this sector, Correia de Mattos said that the country's technological development has passed through three distinct phases: "The first was the import of highly sophisticated equipment. The second was local manufacture of that equipment. The third was nationalization which, although not providing complete independence, saved us considerable money."

8568
CSO: 5500/2008

BRIEFS

TRACKING ANTENNAS FOR COLOMBIA--The Colombian Government is interested in purchasing an unspecified number of communications satellite tracking antennas which have been developed by th. Avibras Aerospace Industries. After 7 years of research, this enterprise has managed to increase the precision of its antennas to such an extent that they can be set up in the Amazon where several of these units are already operating. The best model is the Ansat-10, which costs $140,000. It is being used by Embratel, which has already set up 25 of these units throughout Brazilian territory. [Sao Paulo O ESTADO DE SAO PAULO in Portuguese 27 Sep 81 p 30 PY]

TV SATELLITE SYSTEM--A contract was signed today in Sao Paulo between Embratel [Brazilian Telecommunications Company] and the Sao Paulo Bandeirantes Network. Labor Minister Murilo Macedo presided over the signing of a contract between Embratel and the Bandeirantes Television Network for the cont'nuous use of the channels of Intelsat IV satellite, which will allow the integration in a national network of the 23 stations affiliated to the Bandeirantes Television Network beginning the second half of 1982. [Brasilia Domestic Service in Portuguese 2200 GMT 9 Oct 81 PY]

FRENCH RADARS IN 1982--Brasilia--Jacques Calvet, president of the Bank of Paris, said yesterday that France is already producing the radars purchased by the Ministry of Aeronautics to strengthen and improve the flight control system. According to Calvet, the radars are to arrive in 1982, at least in part, to make possible their installation in accordance with the Aeronautics Ministry's plan. Upon being received by Aeronautics Minister Brig Delio Jardim de Mattos, the Bank of Paris president said that "the Brazilian economy should be projected over the next 20 years, displaying optimism and confidence in Brazil's current situation despite difficulties it is presently experiencing, since difficulties also occur in France, Germany and the United States." [Text] [Rio de Janeiro O GLOBO in Portuguese 23 Sep 81 p 17] 8568

CSO: 5500/2008

BRIEFS

'RADIO UNIDAD' OPENS IN USULUTAN--Completely sure that the people will be victorious, Radio Venceremos, official mouthpiece of the FMLN, initiates this broadcast by greeting Usulutan Department, its people, revolutionary army and militia. We greet Radio Unidad. Yesterday, at 1500, a new FMLN radio station began its broadcasts of freedom from (Tres Calles), Usulutan Department. From our guerrilla camp, we send greetings of solidarity to the companeros who have built this new tool of the people to break the barrier of silence and death that has existed for 50 years. We greet Radio Unidad, which is broadcasting twice a week, on Thursdays and Sundays, to the people of (Tres Calles), Usulutan. Forward, companeros: Welcome to the ideological battle against the dictatorship: the moment when the skies of El Salvador will carry only the radio waves of revolutionary truth is near. When this happens, Radio Nacional will remain only a curiosity in the museum of the revolution we will build. Radio Unidad will be broadcasting on Thursdays and Sundays from 1500 to 1600, from Usulutan, on the first band [as heard]. The broadcasts will be directed to the population in that war front. [Text] [PA071651 (Clandestine) Radio Venceremos in Spanish to El Salvador 1200 GMT 7 Oct 81]

CSO: 5500/2021

BRIEFS

COMMUNICATIONS DIRECTOR FROM JAPAN--Upon his return from Japan, Miguel Alva Orlandini, director of the Social Communications Department, has stated that Japan is interested in helping Peru improve its telecommunications system and that by the end of the year the Japanese will submit a draft project in this regard. [Lima Domestic Service in Spanish 1200 GMT 1 Oct 81 PY]

CSO: 5500/2017

BRIEFS

TV RELAY STATION INSTALLED--According to a central news unit report from Mahabad, by the continuous efforts of a technical group dispatched by the Voice and Vision of the Islamic Republic of Iran, the installation of the new 10-watt [as heard] television relay station has been completed in Mahabad and this morning it was visited by the governor, the commander of the guards crops, the manager of the television center and representative of the Mahabad garrison and also all the officials of the revolutionary institutions of this city. With the installation of this relay station the inhabitants of Mahabad and nearby villages up to a radius of 50 km will be able to watch the programs of the national network of the vision of the Islamic Republic of Iran on three television channels. [Text] [LD181244 Tehran Domestic Service in Persian 1030 GMT 18 Oct 81]

SARAVAN RADIO STARTS OPERATING--According to a central news unit report, thanks to cooperation from the governor's office of the city of Saravan and thanks to round-the clock efforts by our brothers from the repair and maintenance unit of radio transmitters of the Voice and Vision of the Islamic Republic of Iran, beginning from tomorrow morning, coinciding with the auspicious 'Id-e Ghadir-e Khom, the radio transmitter of the city of Saravan will begin operating with a power output of 1 kilowatt and at a frequency of 1584kcs. The radio transmitter of the city of Saravan will boost up on the MN waveband [as heard] the programs of the Voice of the Islamic Republic of Iran from 0600 through 0900 and from 1300 through 2000 daily. [Text] [LD161242 Tehran Domestic Service in Persian 1030 GMT 16 Oct 81]

CSO: 5500/5304

BRIEFS

TELECOMMUNICATIONS NETWORK--The LIPTAKO-GOURMA authority has solicited bids for the construction of a telecommunications network financed by the African Development Bank (ADB) and the Nigerian Trust Fund (NTF). The components of the network are the following: (1) telecommunications lines using microwave links to channel telephone communications and television among Upper Volta, Mali and Niger, and related energy equipment; (2) automatic switching equipment for 8 towns in Upper Volta (1,900 lines), 5 towns in Mali (1,100 lines) and 6 towns in Niger (1,900 lines), and related energy equipment; (3) aerial and underground telephone networks for 9 towns in Upper Volta, 5 towns in Mali and 5 towns in Niger; and (4) telephone stations in Upper Volta (2,500), Mali (1,400), and Niger (2,500). Each component is divided into three sections, each corresponding to one of the nations. Bids can be made on all or a part of the components of the network and all or a part of the section. [Excerpt] [Bamako L'ESSOR in French 11 Sep 81 p 2] 5157

CSO: 5500/5078

TEXT OF COMMUNIQUE ON MASS MEDIA COOPERATION

Mogadishu HEEGAN in English 25 Sep 81 p 3

[Text]

At the invitation of Dr Mohameed Adan Sheikh, Minister of information and National Guidance of the Somali Democratic Republic, Hon. Peter Oloo Aringa, Minister of information and Broadcasting of the Republic of Kenya paid a visit to Somalia from 13th September, 1981.

The visit was a direct result of the talks recently held in Nairobi between the President of Kenya, H.E. Daniel arap Moi, and the President of Somalia, Jaalle Mohamed Siad Barre. The two leaders had decided that their countries should endeavour to promote good neighbourliness and friendly relations between their sister neighbouring countries for the mutual benefit of their peoples.

Inspired by their leader's wise decision, the two Ministers held talks at the People Hall in Mogadishu to exemine initial concrate steps of cooperation in the field of mass-media, in the discussions, which were held in a brotherly and warm spirit.

The two sides stressing the importance of the role played by the mass media in promoting understanding and good relations between the two peoples and desirous of utilising the full potential of mass-media in that respect, decided to undertake the following cooperative endeavour:

1. Radio and T.V. Services:-

Exchange of program on cultural and social fields and other

related topics of interest to both sides;

2. **News Agencies:**-

Exchange of news photos between the Kenya News Agency (KNA) and the Somali National News Agency (SONNA);

3. Press and Publications:-

Exchange of feature articles, and other written materials for the enlightenment of their peoples;

4. Film and Visual Aides:-

Exchange of films and cooperation in the fields of film production, co-production and distribution;

5 Theatre:

Exchange of tours by respective national artist and theatre groups;

6. **Coopertion of journalist associations:**

Encourage the cooperation between the two journalist associations of Kenya and Somalia with a view to promoting cooperation between the two countries;

7. Professional advancement:

Exchange of technical know how and experiences, secondment of professional personal, and untilisation of the existing training institutions for their mutual benefits.

— Areas of cooperation in the field of labour were also explored.

Implementation.

For the purpose of practical implementation of the above objectives the two sides agreed to initiate exchange of visits at Ministerial, administrative and professional levels.

Jaalle Mohamed Siad Barre, President of the Somali Dmocratic Republic, warmly received the visting Kenyan Minister and his delegation.

The delegation made visits to Afgoi, Shalambot, Genale and Jowhar where they were greatly impressed by the efforts of the Somali Democratic Republic in making maximum use of her manpower, agricultural and water resources. Visits

were also made to the historical town of Merca and the Jalalaqsi refugee camp.

At the end of the visit, Hon Aringo expressed, on behalf of his delegation, his thanks and appreciation at the hospitality extended by Dr. Mohamed Adan Sheikh and the warm and friendly manner they weer received everwhere. The visting Minister extended an invitation to his host to visit Kenya at a date to be mutually agreed upon. The invitation was happily accepted.

CSO: 5500/5000

BRIEFS

INTERNATIONAL TELEPHONE LINK--Zaire will undergo a real revolution in telecommunications services with the commissioning of a system of automatic telephone links between the main cities in the country and foreign points, toward the end of 1982. Discussions in this connection are underway between the executive council and certain of Zaire's partners, mainly the kingdom of Belgium, the PTT [Postal Telephone and Telegraph Department] reports, involving a study of the technical aspects and financing of the project. The introduction of this new automatic telephone system reflects the desire of the executive council to make the major Zaire satellite telecommunications network [REZATELSAT] profitable, and above all to improve the quality of services provided to an ever larger and more demanding clientele. Unlike the manual system currently in use, the automatic telephone system offers the advantage of being instantaneous and not requiring the services of an operator. It makes it possible to establish the exact length of calls, which will eliminate the cheating and the laxity noted in the billing of certain customers. [Text] [Kinshasa ELIMA in French 29-30 Aug 81 p 1] 5157

CSO: 5500/5079

ALL-AFRICA SATELLITE SYSTEM PLANNED

Salisbury THE HERALD in English 21 Oct 81 p 11

[Text]

BY the end of the decade the Pan-African Documentation and Information System (PADIS) should be in full operation with all African countries linked to a specially designed satellite.

This week delegates, both planning officials and information scientists, from all participating countries are meeting in Salisbury to discuss the project and the next phases of implementation.

But the planned system of computers, satellites, ground stations and services will cost almost $130 million, at today's prices.

It is worth it?

Making the keynote address to the conference yesterday, the PADIS director, Dr Jean Quirino-Lanhounmey, questioned whether the money should not be invested in hospitals, roads, schools, agriculture and other areas of direct benefit to the people of Africa.

The history of development planning in post-colonial Africa showed that the almost total lack of documentation and information on the results of the planning had delayed development of the continent.

"The huge amounts invested in the economic and social development of Africa could have yielded better results if the investment had been made in a suitable and viable documentary environment.

"In the last two decades the economic and social situation on the continent has continually deteriorated, and in relation to the industrialised world, Africa has fallen further behind."

So new methods had to be adopted and the main defect — the lack of documentation and information banks — had to be rectified.

Such services were not a priority in development; they were, in fact, needed before development planning could take place effectively.

Every effort had to be made at all levels, from continental to national, to accept the PADIS standards, and set up the data bases designed to meet the needs of African users, Dr Quirino-Lanhounmey said.

The first phase of PADIS should be complete by the end of this year.

A co-ordination office is currently being established in Addis Ababa, the headquarters of the United Nations Economic Commission for Africa, a computer system installed, indexing standards drawn up, and staff trained. A telecommunication link will be set up with the European system.

In the second phase, due to end in 1984, the data bank will come into use covering many sectors such as transport, energy, education; more staff will be trained; computers will be installed in regional centres and a satellite link planned.

The national links will be designed during this phase and a computer centre, of similar size to the one for Europe, will be installed.

In the third phase, taking the project to completion by the end of 1989, all African countries, numbering about 50, will be brought on to the system's full network.

In his address Dr Quirino-Lanhounmey referred to several competing systems of indexing material worked out in the world, and said PADIS was being set up in such a way as to avoid this professional infighting by processing all available information, no matter how it was presented.

The system would also process and present information in a form usable by the people who needed it at national and institutional levels in Africa.

In his speech on Monday the United Nations under-secretary-general and executive secretary of the Economic Commission for Africa, Professor Adebayo Adedeji, called on all African governments to take the necessary steps so they would be ready for an integrated information system.

National plans had to make provision for PADIS, national co-ordination bodies set up, legislation passed to establish and develop information and documentation services, and staff trained among other steps.

PADIS would be linked with other regional and continental systems giving African states vast information resources, and making Africa an effective participant in the "information age".

CSO: 5500/5612

GOVERNMENT GOAL TO EXPAND RADIO, TV REPORTED

Salisbury THE HERALD in English 17 Oct 81 p 4

[Text]

THE Government's aim was to have radio and television broadcasts which would reach every part of Zimbabwe "so that the entire country and our entire population can tune in to our services", the Minister of Information and Tourism, Dr Nathan Shamuyarira, said.

Replying to points raised during the debate on his ministry's vote, Dr Shamuyarira said that at present Zimbabwe's broadcasts did not reach every part of the country and that some people, especially those living in the border areas, were forced to tune in to the services of neighbouring countries.

The minister said part of the $4 906 000 earmarked for the Zimbabwe Broadcasting Corporation (ZBC) would be used to buy equipment for the organisation with the aim of providing a nation-wide network in mind.

He said that there was also a "great need to update and improve" the equipment at the country's broadcasting stations in Salisbury and Bulawayo.

At the same time that this new equipment was being introduced, he said, the opportunity was being taken to introduce equipment for colour television.

"We are moving from black and white to colour television," he said, adding that in another three or four years parts for black and white TV would no longer be available, hence Zimbabwe had to prepare for the change.

He explained that of the total money earmarked for the ZBC, $4 406 000 would come from aid funds.

Commenting on the $400 000 grant to the Zimbabwe Inter-Africa News Agency (Ziana) the minister said the money was to enable Ziana to get established.

He told the House that in the past news coming from outside Zimbabwe via the international news agencies was routed through the South African Press Association, where it was edited before being sent to Salisbury.

Ziana had been established to avoid this, he said.

CSO: 5500/5612

BRIEFS

NEW TELEX LINK--Bulawayo--A second public telex office will be opened by the Posts and Telecommunications Corporation in Bulawayo in the main post office building on October 19 a PTC spokesman announced yesterday. The office will provide a worldwide telex service to the public and business and industrial concerns which do not have telex facilities, the spokesman said. [Text] [Salisbury THE HERALD in English 16 Oct 81 p 4]

CSO: 5500/5611

BRIEFS

ARMENIAN TV RELAY STATION--A new state television relay station was put into operation recently in the Azizbekov district of the Armenian SSR. The new relay station will enable people living in the mountainous areas to view television broadcasts. The relay station will transmit in color and in black and white. [Text] [GF111623 Yerevan International Service in Armenian 1900 GMT 10 Oct 81]

CSO: 5500/2016

NORWAY LOOKS AT POSSIBLE ROLE IN SWEDEN'S TELE-X

Oslo AFTENPOSTEN in Norwegian 8 Oct 81 p 31

[Article by Knut Lovstuhagen]

[Text] Norway has responded positively to a Swedish invitation to take part in the definition phase of the satellite project Tele-X. The work is to be completed within a year and will form the basis for future industrial policy investment in this satellite communications system for business life. On the Norwegian side Elektrisk Bureau, Inc. will be the primary industrial partner. It is estimated that in the Nordic region alone there is a billion-kroner market for this type of telecommunications.

It was at the government conference last Monday that the Industrial Affairs Ministry received the green light to accept the invitation on Norwegian participation in Tele-X. Even though a definition phase is all that is now involved few doubt that this is a preliminary to an extensive Swedish-Norwegian industrial cooperation. As early as next week Elektrisk Bureau--along with L.M. Ericksson in Sweden--will get going on clarifying what kind of equipment will be involved in the communications part of the project and which systems components it would be natural for Norwegian industry to take care of.

"Participation in Tele-X will open up many big opportunities for Elektrisk Bureau," technical director Ove Aanensen told AFTENPOSTEN. "Tele-X is an experiment that will provide satellite communications for businesses and institutions in addition to providing opportunities for experimenting with satellite television. But we are primarily interested in the needs of businesses and Elektrisk Bureau will concentrate on systems needed to transmit data and sound communications via satellite."

The Norwegian firm is Europe's biggest supplier today of so-called ship-ground stations--small satellite terminals for ships--and more than 100 sets have been delivered so far. Firms that want to use satellite communications will also need small terminals in order to send and receive data and sound and EB [Elektrisk Bureau] intends to go ashore with its ship-ground stations.

"In the United States IBM, Aethna and Comsat have joined forces to establish their Satellite Business System, SBS. The French are working on a similar

project, Telecom-1 which will meet business needs for satellite communications in central Europe. Tele-X will be the Nordic region's response to these systems and trend analyses indicate there will be a billion-kroner market in the Nordic lands. In addition there will be exports," said Aanensen who pointed out that satellite communication will be an efficient aid in connection with the electronic offices the outlines of which already seem to be shaping up.

According to Aanensen EB will try to introduce close cooperation with Norwegian research institutions in the definition phase now starting. Other Norwegian industries will also be involved as the project develops. The first thing will be to work out systems for the communications side of Tele-X and find out which system components would be suitable for development by Norwegian industry. This work will be done in close contact with L.M. Ericksson which with Saab-Scania is the Swedish industrial firm with major responsibility for the project.

On the Norwegian side between 5 and 10 million kroner will be invested in the definition phase. The main project leading up to the launching of Tele-X in 1986 will call for a Norwegian investment in the 100 million kroner class.

"The most important thing about the work we are now entering into is to get the price of the satellite terminals down to a level that will make them attractive to business, including small and medium-size firms," Aanensen said. "This means extended use of very complex high technology. Elektrisk Bureau is investing in Tele-X because satellite communications are a rapidly-growing field. As a communications firm we cannot let this field go by."

6578
CSO: 5500/2014

NORWAY'S INDUSTRY MINISTER DISCUSSES VENTURES WITH SWEDEN

Oslo AFTENPOSTEN in Norwegian 8 Oct 81 p 31

[Text] "The technology represented by Tele-X is something most of us are convinced will come--regardless of what we may decide to do in this part of the world. If we want to be part of this technology the train will be pulling out soon. We are taking part in the definition phase of Tele-X to clarify what this project will mean in terms of opportunities and challenges and what will be of interest for Norwegian industry and for Norwegian consumers in particular," Industrial Affairs Minister Finn Kristensen told AFTENPOSTEN.

Cabinet minister Kristensen pointed out that there has been some discussion for a while now concerning Tele-X in relation to the broadcasting satellite project, Nordsat. The Norwegians have constantly stressed getting in on the development of the Nordic television satellite but today we must face the fact that it will be some time before a Nordsat is up in the sky.

"Tele-X could be a limited alternative to Nordsat, since the satellite has the built-in capability of covering all the Nordic channel needs. But that is something we must take a stand on later. In this round we are concerned with defining various aspects of a project intended primarily to cover business communications needs. Tele-X will experiment with data communications via cheap ground stations, wave dissemination experiments will be conducted and mobile service tests will be carried out. The assessment of Norwegian industry is that Tele-X is an interesting project technically and we are now stressing participation in the definition phase begun by the Swedes. When this is concluded we will decide whether and on what basis we will involve ourselves in realization of the project."

The Swedes have also invited the other Nordic lands to participate in work on Tele-X and Kristensen said that others besides Norway and Sweden consider it in their interest to cooperate. He predicted that both the Norwegian Technical Science Research Council and the Telecommunications Agency would play an important role in the work of clarifying whether Norway should take part in the project beyond the definition phase. It should also be a goal to involve as much of Norwegian industry as possible. It is estimated that carrying out Tele-X will cost around 800 million Swedish kronor. The Industrial Affairs Ministry appropriated 1 million for the definition phase to be concluded within a year.

6578
CSO: 5500/2014

PAPER EXAMINES SWEDISH, FINNISH STANDS ON NORDSAT PROPOSAL

Helsinki HELSINGIN SANOMAT in Finnish 30 Sep 81 p 2

[Editorial: "Finland's Nordsat Proposal: Whiffs of Censorial Spirit"]

[Text] Finnish and Swedish stands are coming closer regarding the means of Nordsat satellite cooperation. The Nordic conference working on the enterprise has been given a message from the Finnish government, proposing that the feasibility of one "edited television channel" should be investigated soon. The Swedes earlier made an offer of a truncated alternative to the full-service Nordsat, according to which a limited number of television channels, possibly only one, would be available for the Nordic countries.

In effect, the request by Finland to study this possibility means that we have accepted the principle of the Swedish proposal. The satellite model offered by the Swedes would primarily serve the needs of industry and communications, but would also carry the possibility of limited transmission of television programs.

However, this "edited alternative" is basically not a very rational solution. It would offer nothing more than what is at the moment available to the Nordic broadcasting companies for exchange of programs. A somewhat greater selection of programs would be available, but actually even the present system allows for this. The real question is whether we have the will to widen the policy of cultural cooperation--the availability of television channels and transmission time is not the actual stumbling block.

The central idea behind the original Nordsat plan was that it would enable each Nordic country to watch the others' direct television broadcasts. The advantages of this system would have been an increase in both the timeliness and variety of Nordic information exchange.

The system of one edited channel would not offer these advantages, or at least they would be of much less significance. As far as the programming policy is concerned, one Nordic television channel would not be a particularly significant innovation. The Finnish "proposal" of investigating the possibility of one channel is not as much a sign of will to compromise, as it is a sign of fostering a certain amount of censorial spirit. "The edited alternative" would be a censored channel.

It has now been demonstrated by the Finnish government that the proposal reflects an attempt to duck blame in case the satellite venture completely miscarries. This kind of hand-washing is however unnecessary at this point, because only a stump survives of the original Nordsat plan. Finland cannot deny partial responsibility for this development.

However, television programming is only one aspect of the satellite debate. The venture needs to be investigated also from the point of view of industrial and technological development. There is no doubt that a common television and communication satellite offers an opportunity to develop space technology in the Nordic countries. This opportunity must not be underestimated as the other European countries are already far advanced in developing their own communications systems.

9571
CSO: 5500/2009

TELETEL 3V, VIDEOTEXT CONSUMER DEVELOPMENTS DETAILED

Paris REVUE FRANCAISE DES TELECOMMUNICATIONS in French Jul-Aug 81 pp 22-31

> [Text] Please tell me which administration entrance exams are open to people with a baccalaureate degree in classical literature? Please reserve three seats to Saint-Flour on the day before Easter weekend. Please reserve a tennis court for Sunday morning. I would like to transfer 1,500 F from my checking account to my savings account.
>
> All these services, and many others, could be rendered by Teletel, a system which makes use of a combination of telephone and TV set to allow an individual to communicate with automatic services. Two thousand five hundred homes in the region of Versailles - Velzy - Val-de-Bievre will be used as an experiment over the next 18 months.

Good morning Teletel! The greeting from the Teletel Information Center at Velizy (CITV) appears on the family screen. For the Dupin family, this is a big first. One of the homes among many others in this southwest suburb of Paris (140,000 inhabitants in the five townships included in the test), they have learned through information campaigns in the media that a strange experiment was being planned in their area. Distrustful at first, then curious, they have finally joined together with 7,600 volunteer homes to see what the experiment could bring them. The Teletel team then proceeded to select people based on a scientific mix taking into account profession, cultural level, average age, number of family members, type of housing, and other criteria. The Dupins were lucky to be selected in the sample.

PTT [Post Telephone and Telegraph] employees then came with the terminal: a kind of flat metal box they connected to the phone on one side and to the TV set on the other. Mrs Dupin then only had to pull out of the box a small wireless control keyboard which she used to dial the number of CITV. The center first requested the calling terminal ID then, after having been satisfied with the answer, transmitted a greeting message. Using the user's guide, Mrs Dupin can then call the research service directly. She hesitates a while: order or reservation, banking transaction, local information or administrative guide. The range of Teletel possibilities is wide and the initiative of creating new services is up to the organizations owning the information. About 170 companies have already indicated an interest in participating, to which can be added administrative services and 200 local groups. Alone, or with the help of specialists, they have created services they are trying

to make as attractive as possible. Domestic Data Processing. One could almost say "domesticated data processing."

Where Telephone and Television Meet

In order to "domesticate" a computer, one only has to teach it a dialogue procedure that is easy for the user, and connect it to a telephone network. Low cost terminal equipment is also necessary. The result is home-use data processing. An initial attempt along these lines was made in 1971: the CNET (National Center for Telecommunications Studies) began studying the use of the touch-tone telephone as a data processing keyboard in an application where the computer responded by making up sentences from recorded words. However, the principle of audio response could not be used to interrogate data banks, as explained Mr Christian Carrouge, an engineer at the CNET. Spoken translation of written texts could not be automated and data processing centers would have to be totally redesigned. It was therefore necessary to resort to visual techniques, using readily available means. It was then decided to use TV sets, using a terminal (named tictac) providing an interface with the network and processing video signals.

Meanwhile, research work being done in parallel by TV specialists in the UK (Viewdata system) and in France at the CCETT (Joint Center for the Study of Television and Telecommunications) in Rennes started being known. Their basic objectives were very different from those of Telecommunications which was working on a query system using Tictac. The problem concerned broadcasting using dead times in television channels (for instance the raster return time when the electronic beam is returning to the top of the screen) to transmit pages of information among which the user could make a selection. These are therefore two complementary approaches which converge, in France, into the definition of a system (Antiope) common to the broadcasting system developed by Telediffusion de France and the interactive system developed by Telecommunications.

The latter system, named Teletel, features two major improvements over the ancestor Tictac. First of all, the telephone keyboard has been replaced by a more complete alphanumeric keyboard (letters and numbers) similar to that of a typewriter plus a few function keys. Thus (as opposed to the British system Prestel which is numeric only), the user can for instance transmit his name to execute a command, or type a text to be transferred through the same channel to a "mailbox" in the computer. Secondly, while Tictac only provided a few lines of text, Teletel provides colored graphics which complement and lighten the text. This precaution is necessary, because experience shows that the human eye tires rapidly while reading a screen, and that a screen overfilled with characters becomes rapidly unreadable.

Starting in 1975, numerous market studies confirmed that videotex (terminology adopted by CCITT [International Telegraph and Telephone Consulting Committee] to designate this type of system) corresponds to a real need by individuals and corporations. The possibilities are worth trying and a full-size experiment was therefore deemed necessary. On 30 Nov 1978, the French Government decided to attempt it in a limited area center around Velizy. The responsibility for the experiment was given to the DGT (Telecommunications Service) in cooperation with all involved parties: administration, local communities, and future users. A team was set up to address the many technical problems as well as marketing, vendor search, advertising, and coordination problems.

On 2 Jan 1981, Teletel 3V entered the start-up phase with the inauguration of the first stage of the Velizy center (CITV). User connection began in March, and about 1000 installations were completed in July. All users will be connected before October.

Connecting Users to Suppliers

When Mrs Dupin dialed the CITV number on her keyboard, the call was forwarded on the switched telephone network to one of three "mini-6" computers, each of which can handle 100 subscribers simultaneously. After sending the welcoming message, and perhaps personal messages which may have been deposited in the "mail-box," the system only has to connect to the required service (in this case a travel agency). But first, she decides to interrogate the bank, under the protection of a personal code, in order to get a statement of her account. The request gets relayed to the CITV switching center, which consists of two "Datanet 7103's." From there, the request is relayed to the bank computer, either through leased lines if the distance is not too great, or on the Transpac network (trade name of the French packet switching network). The switching center also transmits to the Center's accounting computer (also a Mini-6) data required for statistical purposes and billing: a base .50 F charge for line use, plus the cost charged by the supplier of the required information (free in the case of the bank). After being reassured on the state of her finances, Mrs Dupin calls the travel agency. In this case, there is no request for a personal file search, the computer only transmits fixed "pages" of information concerning the vacation spots available. The latter service can be rendered by CITV itself: the pages can be recorded on the answering Mini-6, with the setting up and updating of the file being done through another Mini-6 which is also used as a back-up to the accounting computer in case of failure.

In fact, this support function of the consultation services is not part of the specific functions of the Teletel center. In the 3V experiment, the objective is to assist small suppliers of information in taking part while waiting for the creation of external "servers" capable of handling their need. In the French concept of Videotex, the Telecommunications Department will only fulfill a transmission and switching function, which is their traditional mission. The direction is toward a completely decentralized system based upon about 100 access ports accessible through the switched network, and connecting subscribers through Transpac to selected servers. This structure is in contrast with that used in the UK (where the only accessible data is that provided by a few large servers), or the intermediate solution used in Germany which allows any server, large or small, entire freedom to set up and manage its operation: why not, in the future, personal computers users of Teletel?

13,000 F To Be a Server

Will the creation of a videotex service one day be within the reach of a "freelancer"? At least one person already tried: Mr M. Froger, an optician in Versailles and ex-business manager of a distribution company who does not hesitate to speak in terms of "marketing policy," or "public image." He discovered the Teletel project 2 years ago and after inquiring found that the experimentation area corresponded to his type of clientele and that the creation of a videotex "magazine was not excessively costly for him. He stated that: "in 1981 my publicity budget is around 130,000 F, and the Teletel part of it, includin the design of screens,

amounts to only one-tenth." He added: "Each support has its own interest because it does not reach exactly the same persons."

But by its very nature, Teletel cannot be limited to publicity in specific areas and fits well within a general strategy of consumer information. In this spirit the optician mentioned above designed, in association with a telecommunications service company, a 25-screen "magazine" concerning area hospital services (including consulting schedules), eye-doctor services (for each neighborhood), and a mini-encyclopedia of vision problems and possible corrections. The 25 screens cost him 25 hours of work. "The most difficult for me," he says laughing, "was to understand the technical terms in the forms to fill out for the subscription."

But can such individual attempts be successful against the giant programs of big companies who can spend months in research and considerable investments? We hope so. According to the Teletel team, videotex is a media which can be used even by people with a modest budget and "two well designed pages have more impact than 10 which are difficult to peruse."

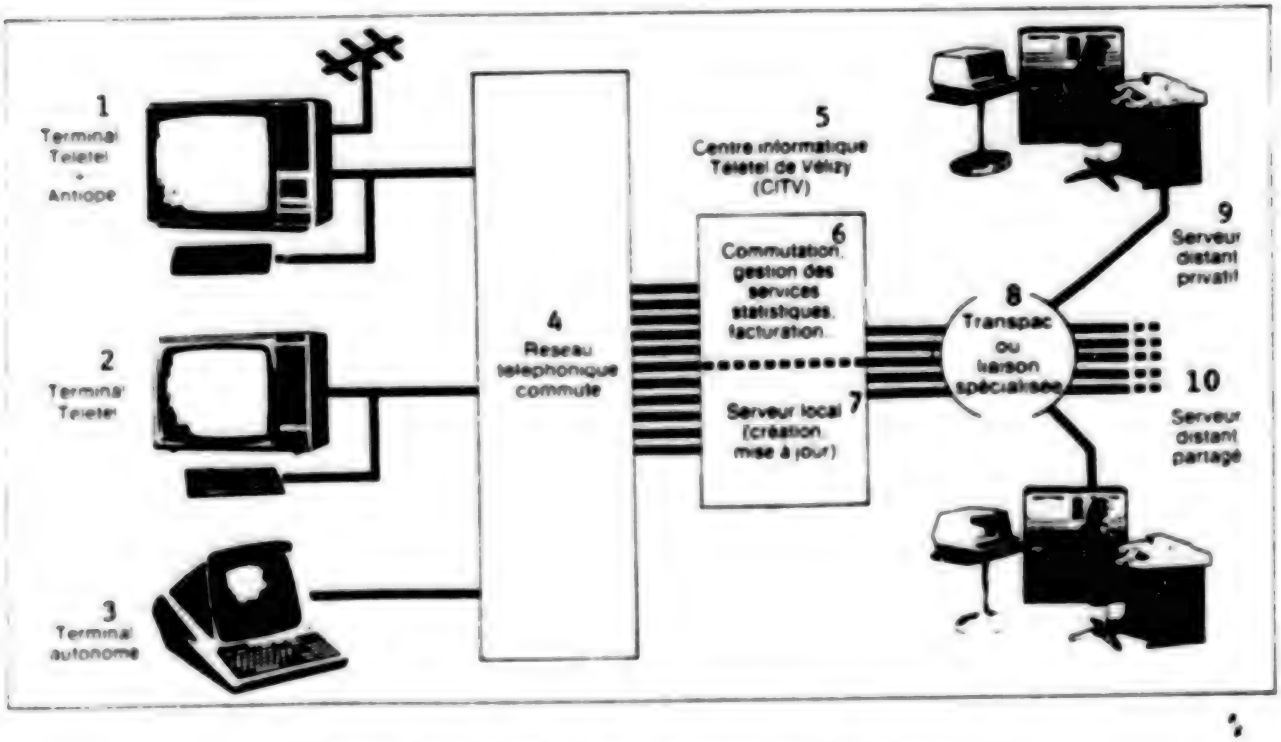


Figure 1. Simplified schematic of Teletel 3V

1. Teletel terminal + Antiope
2. Teletel terminal
3. Standalone terminal
4. Switched telephone network
5. Velizy Teletel Computing center (CITV)
6. Switching, management, accounting
7. Local server (creation, update)
8. Transpac or specialized link
9. Remote private server
10. Remote shared server

Choose What to Say

What does the press think? Three daily syndicates have teamed up into an Economic Interest Group (GIE) to become initiated to Teletel: Although they are asking questions about the possible impact of teleprocessing if it were to be developed without precautions, they do not reject the technical progress and are willing to admit that videotex and hard copy can be complementary.

They have therefore decided to acquire the know-how by publishing a display "newspaper": JEF.

The two newspapermen responsible for publishing this "electronic daily" were able to retrain within a few months by following the golden rules discovered along the way: more rigor in work methods and greater attention to the readers' needs and predictable reactions.

In fact, the creation of a videotex program is the result of mental gymnastics more than pentathlon, because it calls upon extremely varied skills such as data processing, esthetics, psychology, poetry, etc. It is necessary to choose first the type of service or information to be transmitted, considering the characteristics peculiar to the media. In particular, one should take into account the fact that the user who interrogates Teletel is looking for some specific information he needs immediately. This is a major difference with the printed newspaper which is sometimes purchased for the "surprise" value and where, after starting to look for lottery results, the eye often stops on an article which catches its attention, dealing perhaps with new medical discoveries. As pointed out by Pierre Jaume, president of the GIE, the printed press retains its irreplaceable initiation and general culture role.

Another important characteristic of videotex is the requirement to condense information in as few words as possible. For newspapermen trained in the old method (to say what one is going to say, say it is being said, and say it has been said), this imposes a different kind of writing, closer to the memorandum than the encyclopedic article: "experience proves that it is not possible to dedicate more than 2 or 3 screens to any news item (between 40 and 60 newspaper lines); beyond that, the reader becomes tired. Therefore, we limit ourselves to essential information; an embryo of information which prompts the reader to refer to the printed press for complementary details."

After the definition of objectives: "what information? why? for what audience?" the provider of videotex service must define a visual environment and an original writing style so that, in the reader's mind, his magazine cannot be confused with competitors'. It is also necessary to insure that the form be adapted to the content: Abundant and precise information such as employment cannot be presented in the same manner as entertaining information (games, advertisements, etc.) where graphic designs can be used extensively.

Conception of the Dialogue

The third trial the provider of service has to go through can be likened to fencing. The object is to anticipate the user's reactions so that a "conversation" can take

place. At CITV, the dialogues follow a "tree" procedure, starting from the most general concepts ("Do you sometimes eat?") to arrive at detailed descriptions of what is needed ("Do you like couscous with or without chick peas?"). This method, which is simple to implement, has the drawback of becoming tedious after a while, and has been improved by using mnemonic shortcuts. For instance, by typing some mnemonic word such as "Arabrest" it is possible for the user to short-circuit a good bit of the previously described procedure to get directly to the kind of ethnic restaurant for which he is looking.

Another improvement uses special branches which can be used to jump directly from one tree to another without having to go back to the common root. One can thus skip from the restaurant to a movie house without going back to the "Entertainment in Velizy" page.

Thus perfected, the tree structure remains the most obvious procedure for the non-specialist. It guides him step by step through the process and saves him the trouble of referring to the user's guide which can be called using the "Guide" key on the command keyboard. However some providers of services such as the Didot-Bottin (phone book) computer, which is included in the 3V experiment, call upon more sophisticated programs which can provide information by association of key words (for a movie: "First-run" and "comedy"); this multiple-criteria procedure is faster but requires a little training. The direction is probably toward services using a combination of the tree structure together with more complex dialogue methods, so that beginners as well as experts can feel at ease. The immediate difficulty in reaching this goal is related to the present organization of files used in most companies and indexed from a single key word.

But to get back to the tele-newspaper designed by the two newspapermen at JEF. First branch in the tree: the reader can either request the first page headlines, or go to the index of his favorite section. From there, he only has to type the number corresponding to the article he is interested in. Such a simplified procedure would present the risk of leaving the racing fan in complete ignorance of a German measles epidemic threatening his young wife. In order to correct this problem, the designers had the idea of placing newsflashes at the bottom of the pages, showing items covered in other sections along with the mnemonic needed to access it. They also intend to refer the reader to more complete articles published in the regular press. What is, then, the advantage of videotex as compared to the traditional newspaper? According to specialists, it is the number of possible classifications. For instance in their TV listings, they intend to provide a series of "tailored" pages depending upon whether people are interested in children's programs, political debates, etc. The main thrust is: "to progress and anticipate the needs of the user."

The User Will Define the Service

One only has to replace the word "reader" with the word "customer" to discover the reason for the interest businesses in general take in the videotex experiment. The banking community is a good example. If one includes insurance companies, one-fifth of the companies participating in 3V belong to this category; the distribution industry alone is represented in larger numbers. The reason is that they often find it difficult to establish a relationship with their customers. Videotex gives

them the hope of establishing a better contact, at all hours, and at the user's initiative. Another advantage is in the possibility of effecting transfers of funds remotely. For instance, the top French private bank records 42 million operations a month which, in spite of computerization, involve costly paper handling whereas a simple magnetic card reader associated with a Teletel terminal could be used to make bank transfers without risk of fraud (see in our issue number 38: "And tomorrow, electronic money").

While waiting for the development of an all-purpose magnetic card, banks will at first limit their services to operations which do not involve transfers of funds. Thus, the Credit Agricole bank proposes about 10 applications such as bank account balance notification, interest computation, tax determination, etc. All these can be obtained from the home terminal, provided one knows the password.

The most difficult thing is to find a good way to chain successive screens so that they answer the users' expectations. As we have seen, these expectations are not always easy to anticipate within a tree structure: the person requesting a screen concerning home mortgages may be looking for an investment, trying to buy a home, or wishing to have his roof redone. The only way is to anticipate all cases and to ask the user to check the correct answer. Furthermore, it is necessary to design a number of special branches so that, from the home mortgage screen, it may be possible to jump to the "creation of initial deposit" located on another branch. These difficulties, generated by the "single criterion" organization of bank files, do not stop Michel Faurie, who is responsible for the project: "We will be able to modify the file if required, he says. In the long run, it is up to the user to define what he wants. This is very different from conventional data processing."

Striking Graphics Design and Appropriate Text

Some providers of services handle the design and management of their screens themselves, but most sub-contract it to one of the 15 companies specializing in "Advice and Assistance to Teletel Users." The relationship of providers of services to these companies may range from complete withdrawal from the project (giving them the full responsibility for the definition of content, the form of the dialogue, and the screen format), to full involvement: for instance the CEESI (Center for the Study and Experimentation of Information Systems) provides pre-cut and calibrated pages where the only remaining work is to set them up according to the standards established. The correct level of involvement is somewhere between these extremes, in a collaboration at all stages of the design, the providers of service being better aware of the needs of their customers, and consulting companies bringing a better knowledge of videotex.

At the present time, the design of screens proceeds more from craftsmanship than data processing, with tin and chisel being replaced by display terminals. We have met one of these "screen engravers," Dominique Abraham, a graduate of the Beaux Arts school, who came to videotex after a stay in advertising. From the first school, he retained a concern for esthetic qualities, and from his second experience, a sense of the needs of the audience, a desire to deliver an immediately readable message, opposed to the hermetic world that designers often enjoy. Teletel carries this requirement for rigor and transparency to the extreme.

That day, the graphic arts specialist worked on a particularly difficult problem: to draw a videotex picture representing an illustration from the current issue of the "Telecommunications" magazine. He first took from the archives a floppy disk containing the semi-graphic representation of a Teletel terminal. After inserting the diskette into the terminal, the desired picture appeared on the screen. He then started to work on the keyboard: a cursor was moving across the screen as he worked, stopping from time to time on a character to be erased, a line to move, a color to be changed, a sign to insert, etc. Slowly, from a stack of small rectangles, emerged three figures sitting in their living room. A few more strokes and the completed work was translated into digital code in the memory of the second diskette.

Composition: The Brain and the Tool

The creation of a videotex magazine concludes with the generation of this diskette. Through the different steps, we have met with graphics designers, computer specialists, salesmen, and journalists. All worked to create the best possible dialogue, from their own specialized point of view.

Three French manufacturers have started producing tools for videotex composition. In their order of appearance, they are Unitel, FIES, and Telematique. At the beginning, these tools were conceived somewhat like display keyboards, and the first designation of the system (Teletext) as well as its present name (videotex) reflects this historical primacy of the written word. But graphics designers came upon the scene: they discovered the technical limitations of the machine and prodded the manufacturer to improve it. Conversely, each new creation from manufacturers incited graphic designers to improve upon their creative imagination until they reached a new limitation of the tool.

Such a situation is not favorable to mass production: composing terminals are still produced in small numbers and at a high price: around 100,000 F. In these conditions, are we proceeding toward industrial production (which would result in lower prices but would reduce the evolution potential) or toward a dichotomy between "art" videotex and "mass" videotex"? perhaps, in the latter case, will it be necessary to return to the "electronic typewriter" of the earlier days, but capable of handling page formatting and text processing? Or will we build machines to be connected directly to the provider of service's computer to capture information and transform it automatically into screen pages? Why not even a computer system capable of simultaneously creating pages for two separate editions: a paper edition, and a videotex edition? In all of this, what becomes of creativity? Research is proceeding at full speed in this area where the possible application of computer art to videotex is already being discussed. Meanwhile, the range of offerings has been considerably enriched. For instance, we have the "tracing table," or "graphic tablet." From the outside, it looks very much like a writing tablet (see issue No 36 of our magazine); a graphics designer draws directly on the tablet using a stylet, and the tablet computes the x - y coordinates in order to transfer it to the screen. A variation on this system is the light-pen which can be used to draw directly on the screen, as on a blackboard.

There are also television cameras whose image is instantaneously transformed into semi-graphic characters and result in a considerable time saving. Most often, however, the image obtained in this manner is rather rough and constitutes the raw

material that the designer must work with to reach a satisfactory result. The composing keyboard terminal is therefore not about to disappear.

The information has thus been captured and transformed into videotex mode. It must still be transferred into the data bank, either through some telecommunications method, or using a floppy disk which may contain up to 100 screens. A composing terminal can also act as a computer console to create or modify the structure of the data bank or to make updates. It must also be capable of interrogating the data bank in the same manner as a consulting terminal.

The Videotex Industry

As opposed to composing terminals, the price of the users' terminal should go down rapidly if they are mass produced. The possibility to offer low-cost terminals is the key element of the French computer industry export strategy, as Georges Nahon indicated in this magazine (Issue No 38). In particular, the market available to the "electronic yearbook" allows French companies to invest in the production of the components required in this type of device. What about the future? Lower cost modems (they are currently the most expensive part of the terminal); microprocessors which provided added graphic capabilities, such as DRCS (used to create a set of specific characters for each application); not to mention the arrival of flat screens in the near future.

This is why French companies have selected the least restrictive standard. It would be unreasonable to freeze videotex as it is being born, when everything points to a fusion of similar systems all of which, from telecommunications to cablevision, tend to allow men to communicate through electronic means. The enormous teleinformation market will belong to the industry capable of offering the most adapted equipment at the lower price. But let us not be too restrictive: The "videotex industry" includes also data processing consulting firms which provide the serving centers and their programs, maintain them, or manage them. They adapt without too much difficulty to the new requirements: more simultaneous computer accesses, fast response times (after more than 2 seconds, the user becomes impatient), programs that are "transparent" to the user and error-tolerant. On the other hand, teleinformation requires less information storing capability (flight schedules toward Spain rather than the complete bibliography on Mozarabic art), and therefore less hardware. All these characteristics underline the advantages of "french-style" demultiplication of data banks and servers to arrive, here again, at mass production. As pointed out by Yves Rouilly, President of Steria (prime contractor for CITV): "we have attempted to create servers designed in the same industrial concept as terminals, since the increase in the number of providers of services will make individualized production impossible." But "industrial concept" does not necessarily mean "standardization," since companies cannot always be content with standard programs: they will only agree, at first, to invest in Teletel sites if they can be integrated within their own computer system. The implementation of a server will therefore begin with an in-depth discussion with the customer in order to size up his operation and end with the determination of several parameters: size of the data bank, proportion of interactive services, number of branches required for the subscribers and suppliers, etc.

Anti-Partitioning

At the conclusion of this videotex investigation where we met with craftsmen and businessmen, dialogue-oriented men and number-oriented men, a main theme seems to emerge. The very vocabulary of the new media leads us to this theme: teleinformation (telecommunications + computers), "videotex" (image + text), "Teletel" (telephone + television), all are suitcase-words, to use Lewis Caroll's phrase, which symbolize the condensation of different institutions and disciplines, which were partitioned in the past, into a single "packet." Teleinformation gets them all together and de-partitions them.

First of all, anti-partitioning is in the videotex teams where the ad man works hand in hand with the programmer analyst, and the writer with the draftsman; it is also in the providers of services who have to meet the needs of their customers more than ever before, anticipate their needs and their reactions; in the administrations who find an easy way of getting in touch with the user; in the graphics designer who must create a direct, less esoteric language; in computer programmers who can no longer take refuge behind their hermetic vocabulary; and especially in the users. The main objective is to give the user easy access to a high number of services and information which will enable him to avoid going out into tangled traffic and will make his job easier and more efficient by giving him exact knowledge about the services he is interested in: business, schedules, formalities, etc. The time saved becomes available for more fruitful forms of human contact suggested in their programs by more than 200 local associations participating in the 3V experiment. But in the end, will the desire to stay at home be more powerful? All foreign experimentation of similar systems, such as cablevision, shows an increase in community life, of the feeling of being a "citizen" first.

Administrative Proposals

Among the 7,600 candidates to the Teletel 3V experiment, 80 percent cited administrative information among the main centers of interest. It is not necessary to invoke Kafka to recognize the complexity inherent in large institutions: labyrinthine rules and regulations, difficulty of identifying the right person to talk to in the right department, not to mention the difficulty of matching one's schedule with the offices' working hours.

Faced with these difficulties, the information services belonging to the various state services cannot fully answer the needs of the people. This is the reason why CEESI (Center for the Study and Experimentation of Information Systems), through which ministries, local governments, public services, etc., can get together to establish new means of communications with the people was created. Videotex is a part of these means.

CEESI was therefore charged with the responsibility of establish a Teletel program for administrations, under the leadership of the Government General Secretariat. The content (about 15,000 pages) was defined by each of the departments concerned. It will be implemented on the Videotel server of Telesystems and Steria. Three types of services are being proposed:

- General Interest Information.

Current regulations (health protection, school regulations, rights of salaried employees, tax laws, etc.)

Employment offered by the Administration:
Results of product tests carried out by the National Consumer's Institute.

- Services involving data processing:

The INSEE (National Institute of Statistics and Economic Studies) will determine contract indexation based upon available economic indicators.

Message services will use an "electronic mailbox" system:

CIRA's (Interministry Centers of Government Information) will respond to questions concerning current regulations.

Local governments will provide, for instance, information on the status of building permits.

Furthermore, several departments will offer services designed independently from the CEESI:

The National Education Ministry offers learning games;
The transportation Ministry offers weather and road conditions information;
The Postal Service offers to owners of postal checking accounts, an account consultation service and information on postal rates and rules.

Antiope, the French Videotex System

Antiope: under this fake mythological term, which really stands for "Numeric Acquisition and Display of Images Organized as Pages of Written Material," lies the French videotex system, designed by the Joint Center for Television and Telecommunications Studies. The initial objective was, using basic data obtained by the British, to design a system which could be integrated as a module in the general telecommunications services. Therefore, it had to be independent of the means of transmission: radio, telephone, Transpac, etc. The particularities of transmitted videotex (for instance the requirement to synchronize the transmitter and the receiver) were therefore separated from the functions necessary, whatever the circuit used, for visualization and printing.

Coding

The ANTIOPE language is a coding standard which provides the means of transmission of the elements required by the videotex service, such as symbols to be displayed and their visual characteristics, data concerning page formatting, etc. The syntax has been designed to allow the introduction of new utilization procedures at all levels, without impacting the operation of existing receivers. The vocabulary consists of 8-bit bytes, or sequences of bytes conforming to international standards (CCITT recommendation V3 and ISO 2022 standard). The first seven bits are used to

transmit information, whereas the eighth bit is used for parity checking. It is therefore possible to symbolize 128 different characters or functions using a single byte. One of the 128 symbols refers to another code which defines 128 additional characters or functions.

Characters Displayed

The screen is divided into 24 40-character lines. An additional line called "page-header" carries service information. Each character is formed by a dot matrix which can be different according to the type of alphabet.

In its most common version, the ANTIOPE system uses two sets of displayable symbols. The base set selected for France corresponds roughly to a typewriter keyboard; it includes all alphabetic and numeric symbols including punctuation and simple operations used in French.

The second set consists in 64 "semi-graphic" characters. In order to use them, the base rectangle has been subdivided into 6 small rectangles which can be turned on or off. Used in various combinations, they can be used to draw rough pictures.

Display Functions

The visual quality and the content of videotex pages can be enriched using special functions which differ according to the type of character they refer to.

- Functions which are common to all types of characters:

Color: a character and its background may be represented in eight different colors: white, red, green, yellow (green and red), magenta (red and blue), cyan (blue and green), and black.

Flashing: a flashing character is made to appear in its color and the background color alternately.

- Functions reserved for alphanumeric characters and symbols:

Background inversion: The color of a character can be interchanged with that of its background.

Size variations: a character can double in height, width, or both.

- Functions used with semi-graphic characters:

Disjunction: A disjuncted character can be obtained by displaying on the background, only the central part of the six rectangles of which it is made.

Pages With Secrets

It is possible to show only part of a page, the rest remaining masked until the user requests the display.

These procedures represent the French videotex system as used in the 3V experiment. This system conforms with international specifications and its design provides sufficient flexibility to be able to react to technical progress and to allow for modifications, once the various countries have agreed upon a real worldwide standard.

User Terminals

Two types of consultation terminals will be provided to the Velizy users. Three-fourths of them will receive the "base terminal" produced by Thomson-CSF and Matra. Using the home TV set as a display terminal, it consists of a flat box located under the TV and another, independent box, which is located inside the first.

The first piece of this set consists of three parts: the "central unit" which handles binary coding of user commands and transforms the digital signal received from the telephone line into video signals; the modem which transposes the coded information in a frequency range adapted to optimal transmission; in addition, one-half of the terminals will include a printed circuit to decode and select radio-transmitted pages of the ANTIOPE broadcast videotex. The set is powered from normal AC voltage (power consumption is about 30 W) and connects to the TV set either through a UHF coupler at the antenna terminal or on the standard "peritelevision" connector mounted on all French TV sets.

The second box consists in the command keyboard linked to the central unit by infrared. It contains a battery which recharges when the keyboard is stored in its compartment.

The last fourth of the users will receive an integrated terminal including keyboard, display (black and white), and especially the modem. The terminal (produced by Matra or TRT) is identical to that used in the "electronic phone book" experiment and also produced by 2 other manufacturers (Telic and Thomson). This terminal is intended for mass production and is already being offered (1,500 F) for high volume orders. Its price should go down to about 500 F.

The capability of the terminal can be increased by connecting peripheral equipment. In particular, the following are planned:

- A telecopier to obtain hard copy at the terminal;
- A magnetic card reader for banking operations.

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CSO: 5500/2002

COMMUNICATIONS MINISTER WEIGHS TELECOMMUNICATIONS REFORM

Oslo AFTENPOSTEN in Norwegian 25 Aug 81 p 5

[Article by Liv Hegna: "Minister Bye Hints Freer Position for Telecommunications Agency in Future"]

[Text] When yesterday he debated the monopoly and future of the Telecommunications Agency with Conservative Storting member Astrid Gjertsen, Communications Minister Ronald Bye stated that personally he has come to the conclusion that the Agency should have a freer position as a state enterprise. He said, however, that he would wait for a report from a committee of experts before he took a final position. In Astrid Gjertsen's opinion an increasing number of unfortunate effects would arise if the monopoly form is stubbornly adhered to.

The committee of experts will primarily deal with the Communications Agency's connection with the state budget, and Astrid Gjertsen stressed that her party, the Conservatives, assumes that in the future as well, the Storting will establish the main lines for telecommunications development in this country.

"Development, maintenance, and modernization of a telecommunications network is a long range task, in which many things must fit together. This makes it urgently necessary to have a plan and an overview in decisions as well, said Astrid Gjertsen.

She pointed out that in the public debate, one gains the impression that better telecommunications and more efficient service have primarily been a question of appropriations. "In a comparison with Sweden, we see that we can have a considerably greater number of telephones for smaller appropriations. "Perhaps the use of the money more than the amount is at fault in Norway," said Astrid Gjertsen, going on to say that in reality there is need for a set of other measures in addition to large appropriations. Specifically, she thought an evaluation of the Telecommunications Agency's form of organization was important. In addition, she thought it necessary to liberalize the Agency's monopoly.

"The Conservative Party does not regard the Telecommunications Agency's monopoly on certain services. The question is how this monopoly is to be limited. The future tasks of the Telecommunications Agency should be limited to establishing, maintaining, and operating the telecommunications network."

Gjertsen compared the Agency with an electric power plant: The power plant sees to it that the customer receives electricity, while the customer himself decides how it is to be used.

There should be nothing more complicated and problematical about the customers in the future going to merchants to purchase the type of telephone apparatus or extra equipment they desire and plug it in than that customers can today buy lamps, ranges, refrigerators or TV receivers," said Astrid Gjertsen, who thought it gratifying that a debate on these questions is under way in the Telecommunications Agency.

For his part, Communications Minister Ronald Bye asserted that the possibility that the Norwegian telephone industry might become competitive in certain areas on the international level would to a great degree depend upon the Telecommunication Agency's ability to adjust to the new digital technology.

"At the present time this calls for a number of actions that might have to be undertaken more rapidly than the Telecommunications Agency has prepared for in its long-range plan. The new technology can also make necessary personnel and organizational moves," said Minister Bye. He also agreed that there was reason for the concern, apparent in the Agency's board of directors, concerning the Agency's efficiency and productivity. His basis for this was both the level difference in relation to Sweden, plus a negative trend in the number of telephones per employee found in Norway.

"Both are reasons for concern. The Telecommunications Agency is working to turn this development around, and an improvement is expected for 1981," said Bye, who thought the new technology ought to provide the basis for smaller increases in telephone bills than would otherwise be expected, and that the new technology should be made use of to a greater degree to finance investments.

11,256
CSO: 5500/2299

TELECOMMUNICATIONS AGENCY HURT BY PERSONNEL LOSS

Oslo AFTENPOSTEN in Norwegian 25 Aug 81 p 25

[Article by Knut Lovstuhagen: "Personnel Flight Is Costly"]

[Text] The departure of skilled technical personnel has become a very serious problem to the Telecommunications Agency. Many of those who quit were to have worked on preparations for introduction of new technology in the telecommunications network. The Agency can already show that it has been very expensive not to have sufficient personnel for planning. "We are unable to develop the data processing systems rapidly enough to save hundreds of millions of kroner," said staff leader Ole J. Haga of the Telecommunications Directorate at a debate yesterday on society's need for communications in the 1980's.

"Without better pay conditions for the key personnel we depend upon, we have no chance to meet our objectives," said Haga. He pointed out that the loss of personnel forces many leaders to devote much of their time to "putting out fires" to repair the damage done. "We must see to it that it becomes popular once more to work in telecommunications."

The debate, arranged by the Society of Civil Engineers of the Telecommunications Agency, was attended by about 200 persons to listen to the exchange among those central to the debate on telecommunications, such as Communications Minister Ronald Bye, Storting member Astrid Gjertsen, Egil Abrahamsen, chairman of the board of the Telecommunications Agency, General Manager Kjell Holter, Administrator Olaf Stavik, and Consul General Peter Collett. In a follow-up of Haga's contribution to the debate, Svein O. Andreassen, chairman of the Society of Civil Engineers of the Telecommunications Agency, said that it was urgently necessary to introduce a more satisfactory system of advancement and pay in the Agency.

Poor Pay

"About 50 civil engineers of the category the Telecommunications Agency needs are graduated annually from Norwegian institutes of technology. The Agency needs perhaps 30 per year, but the electronics industry alone can absorb all of them. In addition, there is the need of the oil industry and other industries for the same type of personnel. We also know that the Telecommunications Agency offers salaries 35-40 percent lower than those in the private

sector. Where are we to get civil engineers?" asked Andreassen, supplying the answer himself. "By making use of existing personnel, but at the same time offering salaries commensurate with what the private sector offers."

Minister Ronald Bye said that if it would improve recruitment to the Agency, he would not oppose freeing the Telecommunications Agency from the state budget. "A freer position for the Agency--if, for example, it were turned into a state stock company like Statoil--this would perhaps be the right model. However, this question we shall have the opportunity to discuss in detail when the Telecommunications committee has completed its work." Concerning the Telecommunications Agency's monopoly, Bye said that politically he was unable to mobilize strong feelings on the question. On the other hand, he would oppose a softening of the monopoly that would lead to the Agency being responsible for everything on the loss side, while private interests handle the profitable side. And he opposed dissolution of the monopoly where social power positions play a role.

General Manager Kjell Holter described the four main problems facing the Telecommunications Agency: First, productivity development, in which the Agency at the present time experiences an increase of 1.3 percent annually. The goal is 3 percent. About the personnel problem, Holter said that unless the personnel flight comes to an end the Agency is faced with a breakdown. The waiting lists for telephones he described primarily as a problem for politicians, who each year decide how many telephone exchanges and meters of cable the Agency can buy, regardless of how effective the Agency may be. The last problem is poor service and too long delays, a responsibility the Agency must handle alone.

11,256
CSO: 5500/2299

TECHNICALLY ADVANCED TELEPHONE TO BE INTRODUCED

Oslo AFTENPOSTEN in Norwegian 25 Aug 81 p 9

[Article by Terje Avner: "The Tastafon--A New Generation of Telephones"]

[Text] Next year tens of thousands of Norwegian telephone subscribers will exchange their old telephones for the new "Tastafon." Though it has escaped notice by most people, a new generation of telephones is making its appearance--completely different from those hitherto produced: of elegant design, six different colors, a keyboard instead of a round dial, and with a number of technical options. Today, a so-called pilot series of 30,000 instruments is being produced, of which 3,500 were delivered in Oslo, Drammen, Alesund, and Bergen in June. The telephones are being assembled in Risor.

The new telephone has been named the "Tastafon" [push button phone] the name indicating much of the visual change in the new generation of telephones.

A keyboard, not unlike the one we find in pocket calculators today, replaces the circular dialing disk. The design is elegant: flat and square, with a touch of the 1980's, and different in all ways from the telephone today described only as the 67 Model," produced from 1967 until today.

The Tastafon--named following an internal naming competition in the Telecommunications Administration--is being assembled in EB's [Electric Bureau] plant near Risor. "Here we shall next year produce up to 20,000 Tastafones per month, or between 200,000 and 300,000 annually," says plant manager Fred Schwabe-Hansen. The plant is now busy producing the pilot series of 30,000 instruments ordered by the Telecommunications Administration. These Tastafones are to be tried out in four cities with computerized exchanges: Oslo, Bergan, Drammen, and Alesund. Next year the equipment will be offered to all subscribers.

"But not free of charge like the earlier models," says information chief Christian Bugge Bjort of Telecommunications. "If you have a 67 model you must pay 400 kroner, plus value-added tax, for one of the new telephones. If you have an older model or are a first-time subscriber you get off with 200 kroner, plus value added tax." This indicates that Telecommunications wishes to replace the oldest telephones first.

About 280 employees of Electric Bureau in Risor have assembled about 190,000 of the 67 model annually in recent year. When production on a full scale of the Tastafon begins, newer technology and special equipment will be used, and as a consequence fewer workers will be needed.

"Four main parts are involved in assembly of the new telephone," explains Bjorn Andvig, "the microtelephone with two shells: the microphone and the sound amplifier, the circuit card, which is the very heart of the instrument, and the cables--produced by the Norwegian Electric Cable Factory--and the final assembly with testing of all functions.

The result is a tasyafon minus a lid. Because of the possible color combinations, the covers are installed by Telecommunications itself.

"Everything indicates that the new telephone instrument will be a success," says plant chief Schwabe-Hansen. "We are constantly being called by people who want such equipment. We cannot help them, of course. Everything is handled by the Telecommunications Agency."

A new telephone is not only a matter of a new design. Actually, there will be two types. One so-called decadic, similar to the telephones of today, and one with "tone signaling" says information chief Christian Bugge Hjort of Telecommunications. Without going into detail on how tone signals act at an automated telephone exchange, we shall mention some of the possibilities of such an instrument. It makes relaying of a telephone connection possible. An incoming call to your private number is automatically relayed to another number programmed in advance by the subscriber. Further, often used numbers can be replaced by two-digit numbers when so programmed. Automatic awakening at a certain hour programmed by the subscriber can also be ordered.

The new Tastafones will also improve the office environment. Two different sound frequencies and two different tones will make it easier to determine which telephone is ringing. This is today doubtless a problem in many offices.

Development comes rapidly in telecommunications.

"Even if today one can see a trace of status symbol in being among the first to have the new telephone, many things indicate that within only a decade it will be replaced by a new generation," predicts plant chief Fred Schwabe-Hansen of Electric Bureau.

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CSO: 5500/2299

WHOLLY AUTOMATED MOBILE PHONE SYSTEM ADVANCES

Oslo AFTENPOSTEN in Norwegian 8 Oct 81 p 30

[Article by Terje Avner]

[Text] The fight is just starting over a brand new joint Nordic mobile telephone market.

In Norway alone the sale of the new wholly automatic mobile telephones is expected to involve more than 1 billion kroner over the next 4 years. Ten suppliers who have been working with the Telecommunications Directorate on developing the system will find themselves in an acute competitive situation. The battle has already begun in advertising space and on billboards. On 10 November regular operation of the system will begin.

The new Nordic automatic mobile telephone system means in a nutshell that one can call up all over the world from a car without going through an exchange. In the Nordic region one can also be called up directly from any telephone. At the beginning of August test operation of the system started, just in eastern Norway. Some 50 pieces of equipment have been used since then by the Telecommunications Agency and a corresponding number have been used by suppliers.

"The idea of this kind of trial operation is to discover minor irregularities. In this period the system worked very well," chief engineer Kare Gustad of the Telecommunications Directorate told AFTENPOSTEN.

After 3 months of trial operation the system will go into regular operation in eastern Norway on 10 November. After that the system will be expanded in stages until it covers the entire country in 1985. In this space of time the Telecommunications Directorate expects to get about 40,000 new mobile telephone subscribers. The price varies between 20,000 and 28,000 kroner. Taking an average of 25,000 kroner it looks as if there will be 1 billion kroner in sales over this period. In addition will be those of the existing 30,000 subscribers who want to change over to the new system.

Ten suppliers, both Norwegian and foreign, have worked in recent years with the telecommunications authorities to develop the new automatic system. They are: J. M Feiring, Inc. representing AP Radiotelephone (Denmark), Lehmkuhl-SRA, Inc.

representing SRA-Sonab (Sweden), Gustav A. Ring, representing Storno, Inc. (Denmark), Bjorn D. Rostad, representing Mitsubishi (Japan), Salora Norge, Inc., representing Salora (Finland), Ola Tandberg Elektro, representing Motorola (United States), Siemens, Inc. (Norway) and Simonsen Elektro, Inc. (Norway). The Japanese NCE will probably be added to the list.

Several of the brands have already been given model approval and the rest are expected to be approved within a relatively short period of time. Prices vary considerably but that is largely due to different forms of use. Among other things at least one of the suppliers has decided to call his new telephone a car phone instead of a mobile telephone. The reason is that the telephone can only be used when it is hooked up in the car. Other units can be taken along if one chooses to remove the unit from the car.

Incorporated in the new system are such things as adding on conference calls. Other technical refinements have been added by the suppliers themselves without being required to by the Telecommunications Directorate. One will also find some variations in form and design. When it comes to technical quality the authorities set the requirements and specifications and quality differences are not large, AFTENPOSTEN was told.

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CSO: 5500/2014

BRIEFS

TELECOMMUNICATIONS AGENCY INCREASES PRODUCTIVITY--Developments during the first 6 months of the year show that total productivity in the Telecommunications Agency is increasing. While during the 3-year period 1978-80 there was an annual increase of .8 per cent, the prognosis for 1981 shows an increase of over 4.5 per cent. These figures were presented to the Telecommunications board on Monday. Total productivity refers to the relationship between the Telecommunications Agency's production of services, on the one hand and on the other hand, its consumption of resources in the form of capital and labor. The net increase of subscribers will this year be over 4000 more than budgeted and is expected to be above 90,000. This is twice as many as in 1978. The demand for new telephones is greater than ever, and much capital will have to be invested in coming years if the waiting lines for telephones are to be done away with in a reasonable period of time. [Text] [Oslo AFTENPOSTEN in Norwegian 22 Sep 81 p 31] 11,256

CSO: 5500/2004

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6 Nov 1981